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DETERMINING INDUSTRIAL LAND VALUES FROM A "NET-NET" LEASE

IN past years, industrial real estate other than loft space has, in the main, been owner occupied. With the advent of the industrial park there has been a trend toward rental and away from outright ownership. Now, more and more firms, including most of the industrial giants, are looking with favor on leases which offer the inducements of freeing capital for other uses and removing the necessity of contracting the construction of the building. Location in a well-planned industrial park contributes additional sugar-coating by removing many of the problems which accompany the planning of a new facility. (See September 1956 Appraisal Bulletin, "The Planned Industrial Development from the Appraiser's Viewpoint.")

The trend away from ownership to rental has brought with it another phenomenon, the so-called "net-net" lease. Simply explained, it requires the tenant to pay all property expense, including real estate taxes, insurance, and exterior maintenance. While this type lease is not a recent innovation, it has been customary in the past for the lessor to pay these property expenses. The rental assigned to the property was assumed to be adequate to cover these items, and also pay a satisfactory return on and of the investment. In the case of those long-term leases written a decade or more ago, the ravages of inflation have eroded away at least a portion of the intended return on the investment. One certain way to reduce this hazard is to place the responsibility for ever-increasing taxes and maintenance costs on the tenant, formulating the rental in such a way as to compensate for this shift.

The writer had the opportunity recently to appraise an industrial park located on the outskirts of an eastern city. The project represents a carefully planned and well-conceived development, including among its present occupants several of the Nation's largest industrial corporations. The original tract included some 300 acres with reserve land having been acquired. It is at the intersection of two limited-access expressways and two intersecting railroads.

The appraisal presented some interesting problems, two of which constitute the subject matter of this bulletin. The first is the matter of the net-net lease. The second is concerned with the difficulties attending the determination of land value by the land residual approach, where incomes are guaranteed over only a portion of the economic life of the structures. The management policy of giving early occupants more favorable terms, in order to attract them to the park, is an added complication in both cases. As each additional firm has been situated in the park, the terms of the lease or sale have tended to stiffen. Comparable sales and rental data derived from the project itself, therefore, cannot be considered entirely reliable. Nor could the appraiser be confident that the leases currently being made were at economic rentals; rentals that might be projected to the undeveloped portion of the park.

The first problem to be tackled was the dollars and cents amount to be assigned to the net-net feature. This was accomplished by analyzing rental and expense statements for several dozen industrial installations located in the subject metropolitan area. The amount of taxes and insurance, together with an estimated charge for annual building maintenance, was compared to the gross rental (or estimated gross rental in some instances) for each property. The outcome of this study was rather surprising, in that the range was found to be satisfactorily small (13% to 27%). The median percentage was found to be 20%, and the arithmetical average 19.5%. A spot check of industrial appraisals that we had made in other cities verified this relationship. A study made in St. Louis,

for instance, indicated that taxes would run from 10% to 12% of the gross revenue, insurance 0.2% to 0.6%, and maintenance 7% to 10%. Totaling the extremes indicates a minimum of 17.2% and a maximum of 22.6%.

A check of comparable rentals for modern one-story warehouse or industrial buildings indicated that, where the owner pays the normal property expenses, unfinished space could be expected to rent for approximately 90¢ per square foot, and finished space at $1.50 per square foot. Using the ratio determined in the previous paragraph, it was possible to fix the economic rental for the subject property. The subject structure, located on 4.5 acres of ground, includes 42,000 square feet, of which 13,500 is finished air-conditioned office space. The economic rental was determined as follows:

Office	13,500 x $1.50	$20,250
Warehouse	28,500 x 0.90	25,650
		$45,900
$45,900 x 80% (adjustment for taxes, insurance, and exterior maint.) .		$36,720
$36,720 ÷ 42,000 (no. of sq. ft.) = $0.874 per sq. ft.		

The contract rental for the subject property during the first 25 years of its economic life amounts to 86¢ a square foot. It seems reasonable to assume from the foregoing that the contract rent is an economic rent.

The appraiser used one other spot check which might be of interest. The United States Department of Commerce release entitled "Organized Industrial Districts" states that the lease terms written by the Clearing Industrial District of Chicago specify rentals based on 9% of the sales value of the building plus 6% of the sales value of the land. In this instance the total cost of the improvements is a known fact. Since, at this point, the land value from the income approach has not yet been developed, for the sake of this analysis, reliance is placed on the price paid in the most recent sale of ground in the park.

Replacement cost of improvements = $360,000	
$360,000 x .09	$32,400
Most recent land sale was at the rate of $15,800 per acre	
$ 15,800 x 4.5 (no. of acres) x .06	4,270
Total rental	$36,670
$36,670 ÷ 42,000 (no. of sq. ft.) = $0.873 rental per sq. ft.	

Having proved, to a satisfactory degree, that the contract rent was an economic rental, attention could then be turned to the problem of evaluating the land. The case under consideration involves a tenant with a top-flight credit rating, one of the largest industrial corporations in the Nation. The site includes 4.5 acres. The improvements consist of a modern one-story industrial structure of 42,000 square feet, of which 13,500 are air-conditioned offices. The construction is typical of present-day warehouse construction. The exterior walls are brick over cinder block, the roof framing is of bar steel joist construction, the roof covering being high-grade, built-up composition over insulation blocks.

The building, now under construction, is to cost $360,000, which amount includes 2 loading docks and 20,000 square feet of paving of various types. The total cost of construction averages $8.60 a square foot. Considering the amount of office space involved, this figure was found to be in line with the cost of similar type construction in the area. The lease terms call for an initial 25-year period at an annual rental of $36,120, paid on a monthly basis. The tenant has the option to renew the lease for an additional 10 years at half this amount. The improvements are considered to have an economic life of 50 years.

It would seem that, having the exact cost of the improvements and knowing the terms of the lease, the evaluation of the ground by the land residual approach should be simple. On closer scrutiny the problem proves to be a bit more complicated. The terms of the lease call for a guaranteed income for only the first half of the economic life of the improvements. An additional 10 years may be considered as reasonably certain. The last 15 years loom as a large question mark. Any analysis

based on a processing of the guaranteed income is confused to a considerable degree by the matter of the land and building reversion at the end of a 25- or 35-year period. A processing of the income over the entire economic life of the structure in this type analysis must deal with the reversionary value of the land only. In spite of this drawback, the first analysis was made along these lines.

It seems obvious that the income received over the basic lease term, i. e., the first 25 years, has the characteristics of an annuity, and in view of the caliber of the tenant, can be capitalized at a 7% rate. It was considered, that while the income to be received during the 10-year option was slightly more speculative, it had the characteristics of an annuity because of the attractive 50% reduction in rentals. However, the additional risk was observed through the use of a 7½% rate. Unquestionably, a much higher risk must be attached to the income to be received over the last 15 years of the economic life of the improvements. In order to allow for a steady decrease in rental during this period it was felt that the income stream must be adjusted on a straight line basis. It was assumed that these rentals would have as an initial level (during the thirty-sixth year) the same rate as that specified for the option term. It was further assumed that even after the adjustment of the income stream, a higher risk rate is necessary, and consequently an 8% capitalization rate was assigned. Using these specifications, this approach worked out as follows:

Yr. 1-25 as 7% annuity (Inwood factor for 25 yrs. = 11.654)
$36,120 x 11.654 . . . . . $420,942

Yr. 26-35 as a 7½% annuity (Inwood factor for 25 yrs. = 11.147; for 35 yrs. is 12.272)
$18,060 x 1.125 (12.272 - 11.147) 20,318

Yr. 36-50 @ 8% decreasing annuity, rentals to be computed at the option rate

Rate of decrease = $\frac{r \times R}{r + R} = \frac{6.67 \times 8}{6.67 + 8} = 3.64$, where $r = \frac{100}{15} = 6.67$

Present worth of an annuity of $1 per annum, decreasing at a rate of 3.64% for 15 yrs., is $6.81. If deferred 35 yrs. (@ 8%) it would equal
6.81 x .0626 = $0.426

Thus the income to be received during the last 15 yrs. is equal to

$18,060 x .426	7,694
Present value of land and improvements	$448,954
Less cost of improvements	360,000
LAND VALUE	$ 88,954

$88,954 ÷ 196,020 (4.5 acres @ 43,560 sq. ft.) = 45.4¢ per sq. ft.

While we have not, in this approach, dealt with the problem of the reversionary value of the land, it has been minimized by putting off its consideration to the fifty-first year. The reversionary value of $1 to be received 51 years from now under the compound interest valuation premise is $0.0197 on an 8% basis, or $0.0403 on a 6½% basis. If we consider this 4½-acre tract to be worth in the neighborhood of $100,000, we are talking in terms of from $1,970 to $4,030, or from 1¢ to 2¢ a square foot. It can be seen that this factor has little effect on the outcome.

In seeking another method of treating the income stream, the present tenant was considered to be the owner in fee simple of the same premises, having had them built for his exclusive use. On this basis, then, the present economic rental might be considered as a basis for computing the income over the life of the improvements. Certainly the use of an annuity premise is justified in capitalizing the return to the improvements, but possibly a 7½% rate would be in order, because of the length of time involved. The return imputable to the land has been capitalized to perpetuity at a 6½% rate. Under this assumption, then, the appraisal might be as follows:

Total rental	$ 36,120
Income attributable to improvements = $360,000 ÷ 12.975 (Inwood factor @ 7½% for 50 yrs.)	27,746
Income attributable to land	$ 8,374
Value of land = $8,374 ÷ .065	$128,831
Value of improvements	360,000
VALUE OF PROPERTY	$488,831

It would appear from this analysis that the terms of the lease, even though reasonable in comparison with other such developments, are, in fact, unfavorable. If this were assumed to be the case, then the next step would be to evaluate the unfavorable aspect of the lease. Further investigation indicates the so-called loss to be simply the lost income over the last half of the economic life of the improvements. Using an annuity premise, it is not difficult to evaluate this lost income, and deducting this amount from the value achieved above, arrive at an adjusted land value.

Value of property, unencumbered	$488,831
Less $18,060 x 1.828 (12.975 - 11.147)	33,014
Value adjusted for leasehold	$455,817
Less buildings	360,000
ADJUSTED LAND VALUE	$ 95,817

$95,817 ÷ 196,020 (no. of sq. ft.) = 48.9¢ per sq. ft.

Considering that this approach develops total land value, including reversion, there is a surprising similarity between the results of the two methods.

While interesting, the second approach is of questionable validity. It might well be debated that the property has no greater value if owned outright by a prime credit risk than leased under the terms previously described. Also, this analysis assumes that a loss due to the so-called unfavorable lease can be assigned to the land only. Assuming that the lease was unfavorable, the loss would have to be considered as attributable to the property as a whole, rather than to one of the component parts. If a property residual is desired, however, such an approach might have some validity.

The foregoing material is not meant to constitute a complete appraisal of the sample tenancy. The summation and comparative approaches have been touched on briefly. We have attempted to focus attention on some of the special problems arising from this particular situation. We hope it will be helpful to others from this standpoint.

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